

## APPARATUS FOR HEATING PLASTIC PIPES

### BACKGROUND OF THE INVENTION

The invention relates to an apparatus for heating plastic pipes so they may be bent and more particularly, the invention relates to an apparatus which may be conveniently used in field work to heat PVC plastic pipes so that they may be bent and fitted on site.

It is known in the art to heat plastic pipe by enclosing it in a box and subjecting it to infrared energy supplied by electrical heaters. In addition, method and apparatus for bending tubes by applying heat to them are disclosed in U. S. Patent No. 3,965,715 to Parmann, U. S. Patent No. 2,571,416 to Brown, and U. S. Patent No. 2,480,774 to Rossheim, et al. The disadvantages of the prior art are that they may be inconvenient for use in the field or at some remote site where a source of electricity or other means for heating the pipe is unavailable. What the prior art lacked was a simple apparatus usable by a person, such as a plumber, at a remote site, employing a readily available heating means.

It is therefore an object of the invention to provide a new and improved apparatus for heating thermoplastic pipe, particular PVC pipe, in the field in preparation for bending such pipe.

### SUMMARY OF THE INVENTION

According to the present invention, a container or box is provided having openings in the ends to enclose a plastic pipe disposed through the box. A conduit is attached to the box and has an end adapted to connect to the exhaust pipe of a motor

directed upon the pipe at the point desired to be bent. When the pipe is sufficiently heated, it is withdrawn from the box and bent in the usual and well known manner.

In order that the invention can be more clearly understood, the preferred embodiment thereof will be described below with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of the invention in use;

Fig. 2 is a top sectional view of the apparatus of the invention, and

Fig. 3 is an end sectional view of the apparatus of the invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Fig. 1, the apparatus of the invention is indicated generally at 1. An elongate container 2 or box is provided for surrounding the section of PVC pipe 3 to be bent. The container preferably includes openings 4 formed through the ends 5 of the box, the openings being sized to permit positioning the pipe to be heated through the container 2. A hinged lid 6 attached to the container 2 by hinges 7 is provided to simplify placing of the pipe in the container 2, while permitting containment of hot exhaust gases in the container.

A fitting 8, which may be any configuration although an elbow fitting is illustrated here, is provided mounted through an opening 9 in a side 10 of the container. A flexible metallic conduit 11 is connected to the fitting by any suitable means and has its opposite end adapted to engage the exhaust pipe 12 of motor vehicle 13. The various means of connection

In the preferred embodiment, a baffle 14 is mounted in the container 2 and may consist of a longitudinally extended L shaped sheet of metal attached to the container 2 by welding or other practical means such as screws 15. The baffle 14 is located so that the exhaust gases existing from the through-fitting 8 impinge upon the baffle plate and not directly upon the pipe to be bent. Spot heating of the pipe is therefore prevented and the hot gases are dispersed and caused to flow around the pipe for more uniform heating. Depending upon the type and thickness of the pipe to be bent, the baffle naturally may vary in length or construction and may include openings 16 therethrough, all of which is considered a part of the present invention.

In the use of the invention, a pipe to be bent is placed in the container and positioned so that the center line of the portion of the pipe where the bend is to be made is positioned opposite the fitting 8. The end 17 of the flexible conduit is then slipped over the exhaust pipe 12 of the motor vehicle and the motor vehicle's engine is started. The hot exhaust gases flow through the conduit and the fitting and strike the baffle in the box where they are dispersed to surround the pipe. When the pipe is sufficiently heated to be bent, which condition may be determined by grasping an end of the pipe and moving it to determine the softness of the section in the container, the lid 6 is opened and the pipe removed, whereupon it may be bent by hand or by the use of jigs, or other means such as are known in the art. Upon cooling, the pipe will retain the bent configuration and it may be carried to the jobsite for connection in other plumbing or conduit lines.